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In Memoriam
Professor Krzysztof Ludwik Birkenmajer
(1929–2019)
an outstanding Polish geologist and polar researcher



Spitsbergen expedition in 1974 [Photo from the private archive of Prof. Krzysztof Birkenmajer]

The community of polar researchers and explorers is saddened by the death of Professor Krzysztof Birkenmajer, who passed away on 23rd February 2019 after a short illness. He was 90 years old at his passing and had led a long and productive life, leaving a legacy that is captured in his many scientific contributions.



Krzysztof Ludwik Birkenmajer was born in Warsaw on 6th October 1929. His childhood was dramatically disturbed by the death of his father Józef (professor of Slavic literature) at the beginning of the Second World War in 1939, during defense of Warsaw against the Germans. Young Krzysztof completed his primary and secondary school education in illegal Polish classes conducted by the underground education system during the occupation. He was involved in the resistance against German occupants as part of the underground Polish scouting (Harcerstwo). After the tragic Warsaw Uprising (1944), his family escaped to Cracow where he continued his education, receiving his high school certificate in 1947. Subsequently, he followed his boyhood passion and studied geology and paleontology at the Jagiellonian University, culminating in his MSc diploma in 1950. Working as an assistant in the geology unit of the Jagiellonian University, Krzysztof Birkenmajer continued his geological studies at the Academy of Mining and Metallurgy in Cracow, receiving his diploma as an engineering geologist in 1954. In the same year, he began work at the newly established Geological-Stratigraphic Laboratory of the Polish Academy of Sciences in Cracow, transformed later to the branch of the Institute of Geological Sciences, where he spent the remainder of his career.

His first scientific study focused on the geology and paleography of the Pieniny Mountains ridge, which became a lifelong fascination. As a young field geologist, he was also an active climber, mostly in the Tatras. In 1956, Krzysztof Birkenmajer completed his PhD thesis on the stratigraphy and paleography of the Pieniny Klippen Belt (defended at Warsaw University in 1957) and was accepted as a member of the small Polish reconnaissance expedition to Spitsbergen. The aim of this group lead by Docent Stanisław Siedlecki, a geologist and famous Polish polar explorer, was the selection of a location of a research station for the Third International Geophysical Year (IGY) 1957–1958. The station was built on the northern shore of Hornsund in 1957 for geophysical, geological and geographical research during the IGY wintering and subsequent summers. Doctor Krzysztof Birkenmajer started his pioneering geological research and mapping in South Spitsbergen and worked as an assistant to carpenters constructing the station. Subsequently, he was leader or member of 13 Polish, Norwegian and Polish-American scientific expeditions to Spitsbergen, resulting in enormous contributions to our knowledge of the stratigraphy and structure of Proterozoic through Cenozoic metamorphic and sedimentary rocks as well as Holocene raised marine terraces. His last geologic expedition to the Bellsund area in southwest Svalbard was in the summer 2002, resulting in new insight into the geology of the Recherchefjorden area. His hard work and collaborations with other Polish and international scientists yielded an unprecedented advancement in our knowledge of the geology of South Svalbard.

In 1971 and 1976, Professor Birkenmajer studied the geology of Eastern Greenland, north from Scoresby Sound, as a member of expeditions of the Geological Survey of Denmark and Greenland (GEUS). The prime objective of

his team was preparation of 1:100 000 geological maps of the region. His unique knowledge of the geologic structures on both sides of the Greenland Sea, led to tone of the first models for break-up of the Laurasiatic Plate, development of the Northern Atlantic basin and geodynamic aspects of mid-ocean volcanism.

In late 1970s, Professor Birkenmajer, as distinguished and internationally recognized scholar, strongly supported establishment of the Polish *Henryk Arctowski* Station in the South Shetland Islands of Antarctica (in operation since 1977). Between 1977 and 2001, he organized and participated in seven Polish and one Brazilian expedition to West Antarctica, studying geologic structures and mapping unknown areas. Four Tertiary glaciations of the region were discovered and documented, with the 30–32 million year Polonez Glaciation extending the record of glaciation in the region much farther back in time than previously recognized. Working with a team of scientists led by Professor Aleksander Guterch of the Institute of Geophysics, PAS, he helped to develop geodynamic reconstructions relating to the crustal evolution of the northern Antarctic Peninsula and South Shetland Islands.

Professor Birkenmajer introduced more than two hundred new geographical place names related to Poland, Polish history, science and culture to Svalbard and in Antarctica. These names were officially accepted by the Norwegian Polar Institute and the Scientific Committee on Antarctic Research, respectively.

Professor Krzysztof Birkenmajer was one of leading organizers of polar sciences in Poland, including his role as one of founders of the Polar Club of the Polish Geographical Society (1974) and the national interdisciplinary polar body of experts – the Committee on Polar Research of the Polish Academy of Sciences (1977). He served as Vice-Chair (1981–1983) and Chair of the Committee (1984–1999). Later, he was elected as its Honorary Chair, remaining active until end of his life. Since the beginning of his Arctic activity in the 1950s, he was instrumental in promoting Polish polar research in the country and internationally.

Professor Birkenmajer served for many years as the Polish Delegate to the Scientific Committee on Antarctic Research – SCAR (1984–1999) and to the International Arctic Science Committee – IASC (1991–2000), playing an important role in both organizations. He served as Executive Secretary of SCAR from 1992 to 1996. He was also a member of the committee on SCAR organization and strategy (1999–2000), which led to a significant reorganization of SCAR to its current status, National Delegate to the Council of Managers of National Antarctic Programmes – COMNAP (1988–1992), and was involved in many other international organizations and societies. His excellence in science, international collaborations and prestige was key in the advancement of Polish polar research to international status.

Krzysztof Birkenmajer published more than 600 papers, treatises and monographs, including geologic maps (more than 20) as an author or co-author.

His works also include some 200 other publications consisting of reports, short papers and popular articles. Four of these are popular books on polar exploration in Svalbard, Greenland and Western Antarctica (in Polish). These works are extremely important for promotion of Arctic and Antarctic research within society. These combined works stand as testament to exceptional intellectual abilities, scientific passion, systematic work and enormous assiduity of Professor Birkenmajer. He was known for his gentle and friendly relations with other scientists, and he was known for his encouragement of promising and hardworking young colleagues from all disciplines.

My personal relations with Professor Birkenmajer extend back to June 1972, when he and Professor Alfred Jahn from the University of Wrocław (my MSc supervisor) went to Gdynia harbor to say goodbye to the participants of the Wrocław Spitsbergen Expedition on board of the m/s *Jan Turlejski* with me as the youngest member of the expedition: student of geography – field assistant. Two years later, in the course of the First Polar Symposium in Wrocław, during discussion after my presentation on processes on Spitsbergen periglacial debris slopes, he encouraged me to continue my research. It was extremely important for me as young scientist. I never expected to one day cooperate with distinguished Professor Birkenmajer as a member of the Committee on Polar Research and to be the editor of his map of geology of the Hornsund area some ten years later. Decades of contacts and cooperation with Professor Birkenmajer enable me to stress that Polish and international polar sciences have lost an outstanding scientist, great man and friendly senior colleague.

As the immediate past Chair of the Polish Committee on Polar Research (2008–2018), I recall with great pleasure my good collaboration with Professor Birkenmajer who had been the Honorary Chair of the Committee and was active advisor and supporter to me and the Presidium of the Committee until his last weeks of life. The Polish polar community will greatly miss him.

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